

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re Application of:
Smith, Dwight M.

Serial No.: 10/768,613

Filed: January 30, 2004

Title: Method and Composition for Creation of Conversion Surface

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Group Art Unit: 1793

Examiner: Zheng, Lois L.

Docket No.: 27435.002

**DECLARATION OF DR. DWIGHT SMITH REGARDING INOPERABILITY OF
CITED REFERENCE IN SUPPORT OF RESPONSE TO OFFICE ACTION**

I, Dr. Dwight Smith, state the following, of which I have personal knowledge:

1. I am a professor at the University of Denver and act as a consultant to EnviroFuels, LLC ("EnviroFuels") and I have a mailing address of Department of Chemistry and Biochemistry, F.W. Olin Hall, Room 202, 2190 E. Iliff Ave. Denver CO 80208. I have been a consultant for EnviroFuels since at least 2002.
2. I have reviewed the disclosure of U.S. Pat. No. 4,060,433 ("Chunat"). Chunat achieves foaming by combining a phosphate solution having foaming surfactants with large amounts of air under pressure and subsequently spraying this pressurized solution at atmospheric conditions using commercial spraying equipment. The exemplary foaming solution of Chunat is aqueous based.
3. Solutions made in accordance with embodiments of the present invention prohibit foaming when the medium is hydrocarbon. Even if one were to add air to the composition of the current invention, foaming would not be established. Consequently, it is my opinion that solutions made in accordance with embodiments of the present invention would not be expected to produce foam.
4. I also have attempted to create a foaming solution in accordance with the disclosure of Chunat found in column 10, lines 21 wherein the carrier fluid is essentially 100% hydrocarbon. However, I have been unable to create such a foaming solution. This inability to create a

foaming solution using a hydrocarbon is consistent with what one would expect on a molecular basis.

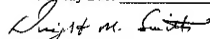
5. It is my opinion that one would not make a solution in accordance with the teachings of Chumat using a hydrocarbon carrier fluid and contact this solution with a metal substrate under engine operating conditions. The basic teachings of Chumat would not be achieved in that there would be no creation of foam. To the extent a foam could be created, it is my opinion that the foam would be detrimental to operations of the engine if a foam were somehow introduced into the running engine. To the extent a hydrocarbon-based Chumat mixture were applied to the outside metal of an engine, it would not foam as discussed above and therefore would not meet the goal taught in Chumat. There would be no point in such a procedure in any event as far as engine operation is concerned. The composition would flow freely and drip off of the engine block. In my opinion, there is no teaching in Chumat that would indicate it would be advantageous to use the Chumat formulation with hydrocarbons and apply them to a portion of a running engine where the formulation would then be expected to drip off.

6. In my opinion, use of the aqueous Chumat solution on a running engine block is highly likely to damage or even crack the block due to the heat. Therefore, one would not use the Chumat aqueous solution on a running engine.

7. In my opinion, pH is an important difference between Chumat and the current invention. The pH of the current invention directly relates to the distribution of phosphate species in the mixture. pH is a logarithmic acidity function, therefore indicating large swings with only small numeric differences. At a pH range of 7 in the current application, the ratio of $\text{H}_2\text{PO}_4^{1-}$ to HPO_4^{2-} is 1.7. In contrast, Chumat's highest pH value of 5.5 equates to a ratio of 49. Such a large difference between 1.7 and 49 is an important distinction and fundamentally impacts the functionality of the current invention and the criticality of the concentrations. When pH is 6, the ratio is 15.8.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Dated: 04 May 2009


Dwight M. Smith